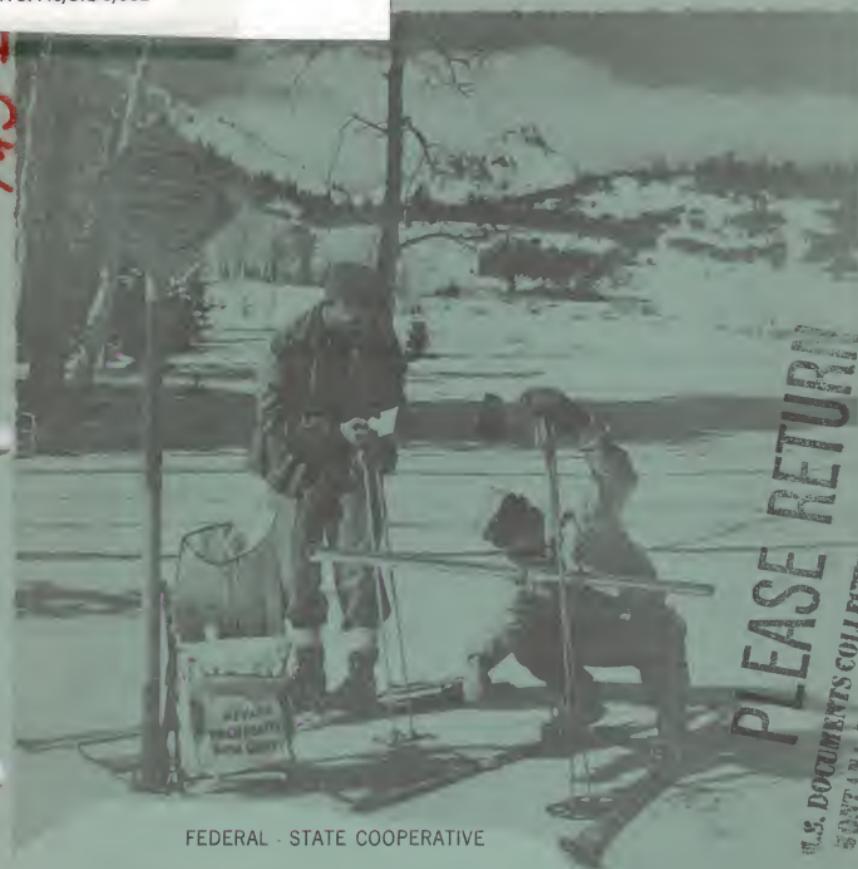


1952



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FEDERAL - STATE COOPERATIVE
SNOW SURVEYS AND IRRIGATION WATER FORECASTS
for

**Montana and Northern Wyoming
Upper Missouri, Upper Columbia and
Yellowstone Rivers**

By

Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and
Montana Agricultural Experiment Station

In cooperation with the U. S. Forest Service, U. S. Geological Survey, National Park Service, U. S. Bureau of Reclamation, State Engineers of Montana and Wyoming and other Federal, State and local organizations.

As of
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MAY 1, 1952

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FEDERAL--STATE COOPERATIVE SNOW SURVEYS

AND

IRRIGATION WATER FORECASTS

FOR

MONTANA AND NORTHERN WYOMING

Upper Missouri and Upper Columbia River
Basins

Report Prepared
by

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and

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Montana Agricultural Experiment Station

Division of Irrigation
Soil Conservation Service

and

Montana Agricultural Experiment Station
Bozeman, Mont.

IRRIGATION WATER SUPPLY OUTLOOK FOR 1952
SEASON
AS OF MAY 1, 1952

Snow survey measurements made on or about May 1 indicated that the HIGH elevation snow is holding in good shape. The above average temperatures and below average precipitation in April has depleted the low elevation snow fields. Very little snow remains below 5500 feet elevation.

Stream flow has been high during April and will remain high as the snowmelt season continues during May and June. Seasonal stream flow forecasts have been adjusted downward by virtue of the lack of precipitation during April and the prospects of a light precipitation figure for May. The fact that the soil under the pack was not frozen at any time during the winter months has had considerable effect on the probable seasonal runoff.

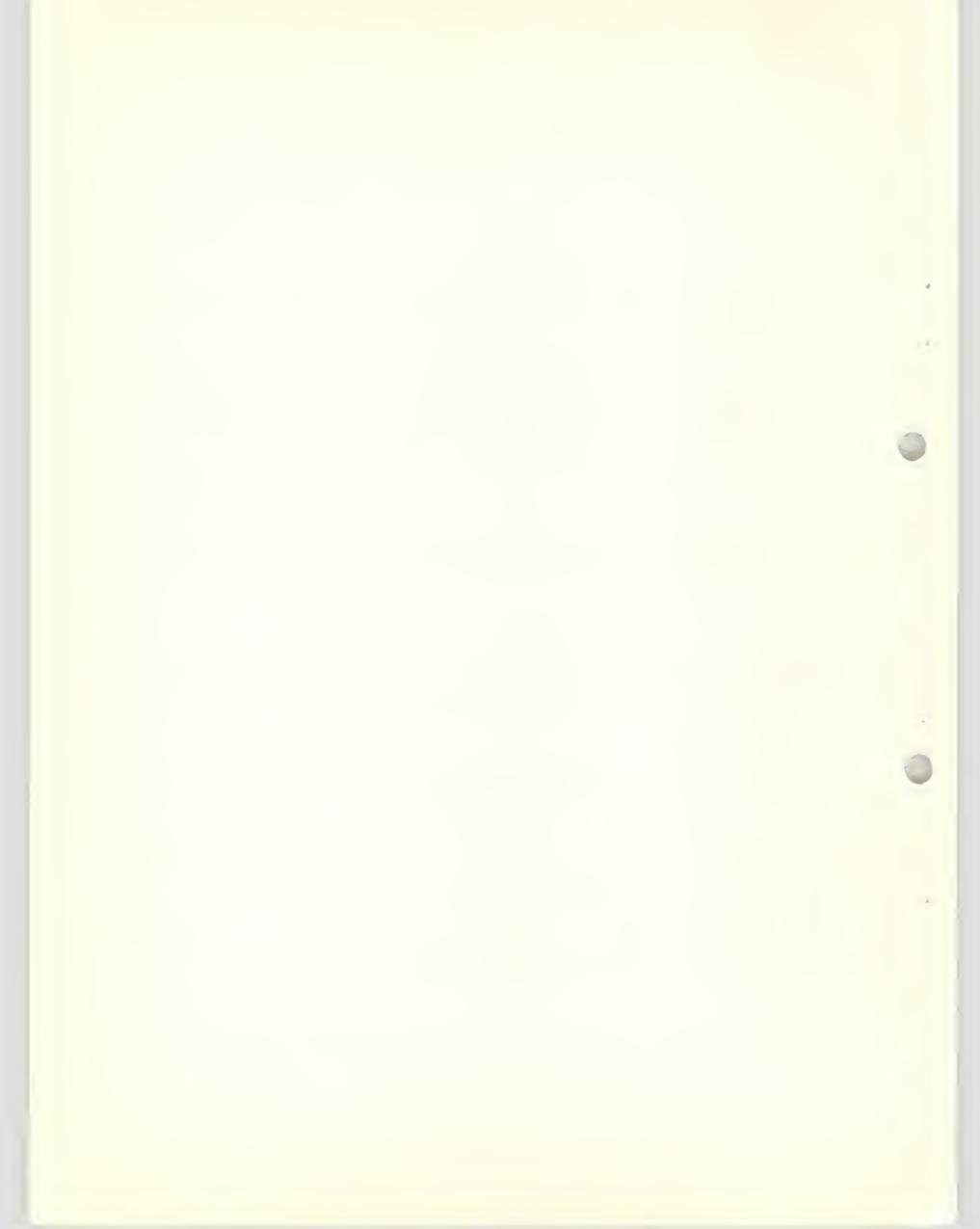
The Wind River Basin in Wyoming has felt the early spring melt season where snow depths and water content has dropped abnormally. The Popo Agie River Basin was not effected too severely by virtue of the heavy snow pack in that area.

JEFFERSON RIVER: Although only a few snow survey courses were measured on the Jefferson, the high elevation snow is still intact. It is anticipated, due to the lack of April precipitations of the seasonal runoff, the stream flow will be 10 to 15% less than anticipated on the first of April.

MADISON RIVER Madison River snow survey courses were measured on May 1 and found to be approximately the same percent of average as on April 1. The forecast for the Madison River at West Yellowstone was dropped from 211,000 to 168,000 acre feet for the May-September season.

GALLATIN RIVER: The Gallatin River snow survey courses on May 1 indicate considerable drop in water content; as a result the May-September forecast was dropped from 553,000 to 502,000 acre feet.

MISSOURI RIVER MAIN STEM: Due to the lack of April precipitation and probable deficiency in May precipitation, it is anticipated that the Main Missouri will flow approximately 116% average during the May-September period.

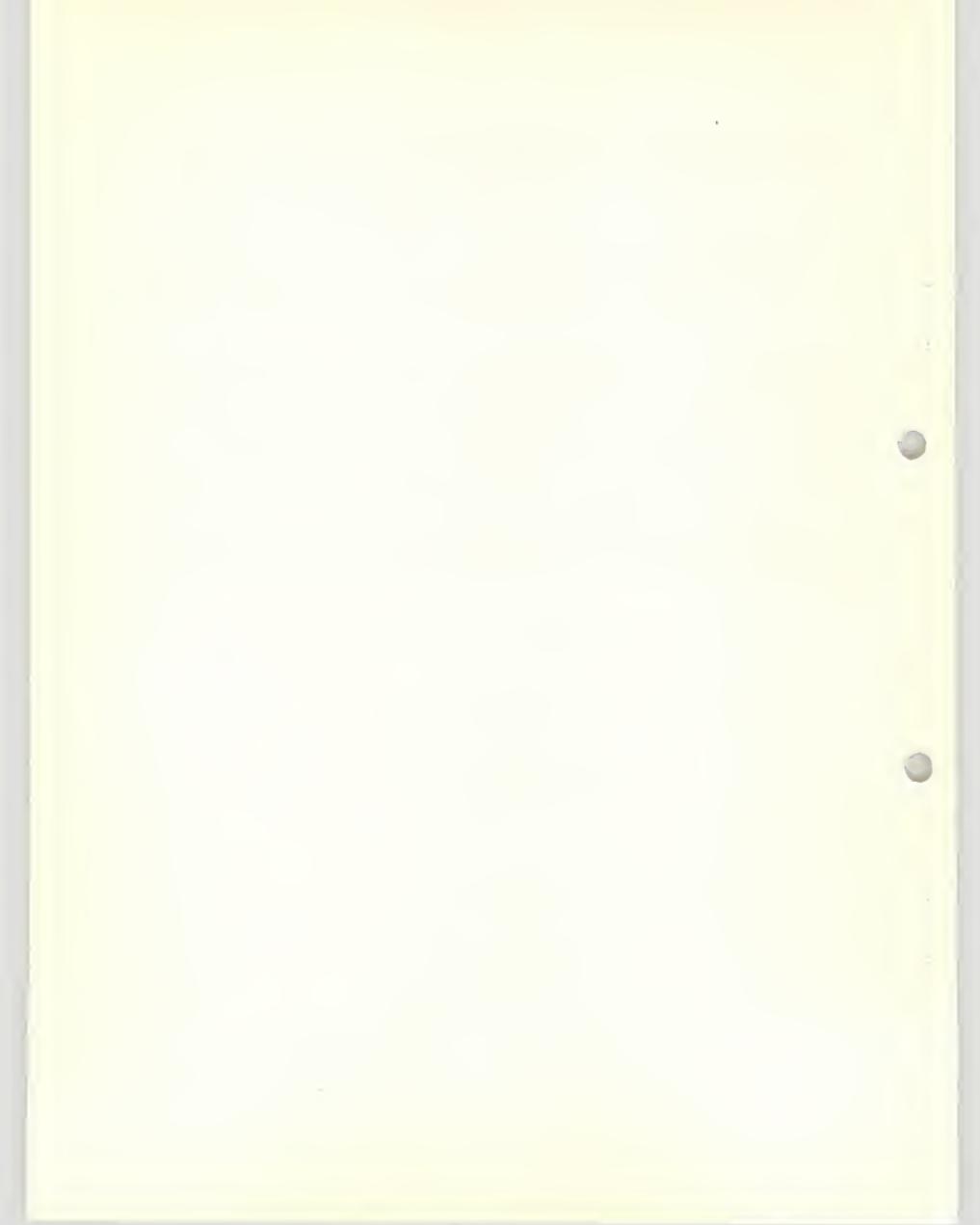


UPPER YELLOWSTONE RIVER: Snow survey measurements made on May first in Yellowstone Park have dropped slightly in their percent of average as of May first, due to the early runoff season and lack of precipitation during April. The forecast for Yellowstone River at Corwin Springs was dropped from 2,237,000 to 1,902,000 for the May-September period.

LOWER YELLOWSTONE RIVER IN WYOMING: Snow survey measurements over the Wind and Popo Agie River have not changed from April to May in respect to their percentage of averages. The Wind River is still a little short, while the Popo Agie is still a little high in respect to normal for May 1.

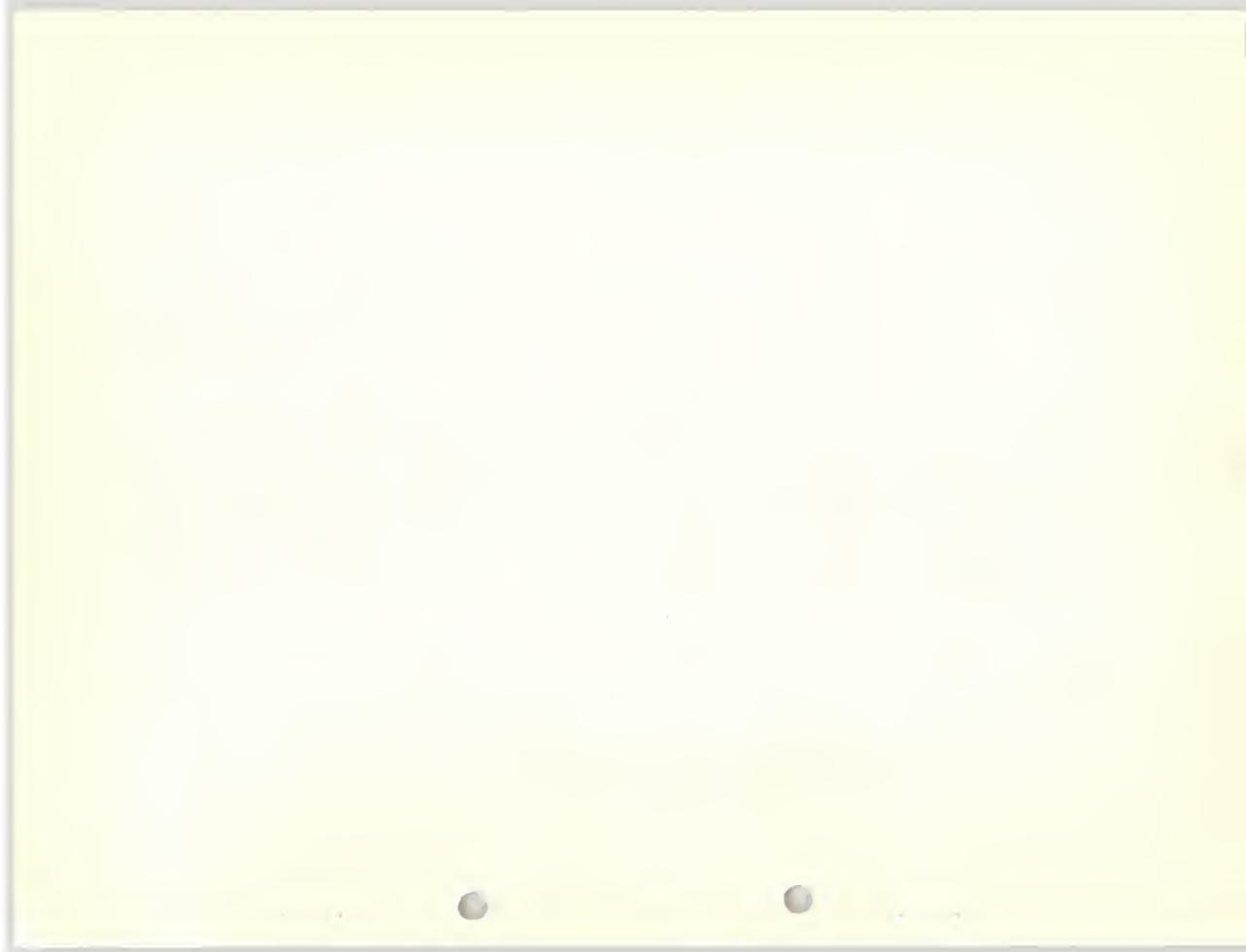
COLUMBIA RIVER IN MONTANA: Snow survey measurements on or about April 1 in the headwaters of the Columbia River in Montana indicate that there is still a good water supply as of May 1. Forecasts of stream flow have been dropped slightly all along the main stem to the Idaho boundary. The abnormally warm weather which occurred earlier in April, together with the lack of precipitation and unfrozen ground beneath the snow pack has reduced the seasonal forecast by approximately 20 percent. The April-September forecast for the South Fork of the Flathead near Columbia Falls was reduced from 2,751,000 to 2,135,000 acre feet. The April-September seasonal flow for the Flathead River at Columbia Falls was reduced from 7,104,000 to 5,728,000 acre feet. The April-September seasonal flow of the Clark Fork at Herron was reduced from 14,232,000 to 12,004,000 acre feet.

* * * * *



MAY 1, 1952
 MISSOURI RIVER BASIN IN MONTANA
 PRELIMINARY ESTIMATES OF SEASONAL RUNOFF
 (1000's acre ft.)

NAME OF STREAM AND STATION	Season May-June	Season July-Aug-Sept.	Season May-Sept.	% 10 yr. Average 1941-50
Gallatin River at Gallatin Gateway	337.4	164.4	501.8	118
Gallatin River at Logan	356.0	139.0	495.0	117
Madison River at West Yellowstone	97.0	71.0	168.0	98
North Fork Musselshell at Delphine	3.0	1.1	4.1	180
Judith River near Utica	45.7	13.2	58.9	131
Yellowstone River at Corwin Springs	1,237.0	665.0	1,902.0	103
Big Hole at Melrose	433.0	152.7	585.7	88
<hr/>				
<u>LOWER YELLOWSTONE RIVER (WYOMING)</u>	April-June	April-Sept.	%10 yr. avg.	
Little Popo Agie at Hudson	---	68.42	120	
Popo Agie near Riverton	176.6		162	
North Fork Popo Agie near Lander	84.4	124.0	99	
Wind River at Riverton	267.5	528.7	141	
Shoshone River below Buffalo Bill	489.9	916.8	130	
Shoshone River near Byron	320.0	620.0	71	
Middle Fork Powder near Keycee	46.8	56.9	117	
Tongue River near Dayton	105.5	133.7	123	
Tongue River at Acme	295.0	330.0	110	
Goose Creek near Sheridan	67.1	79.5		

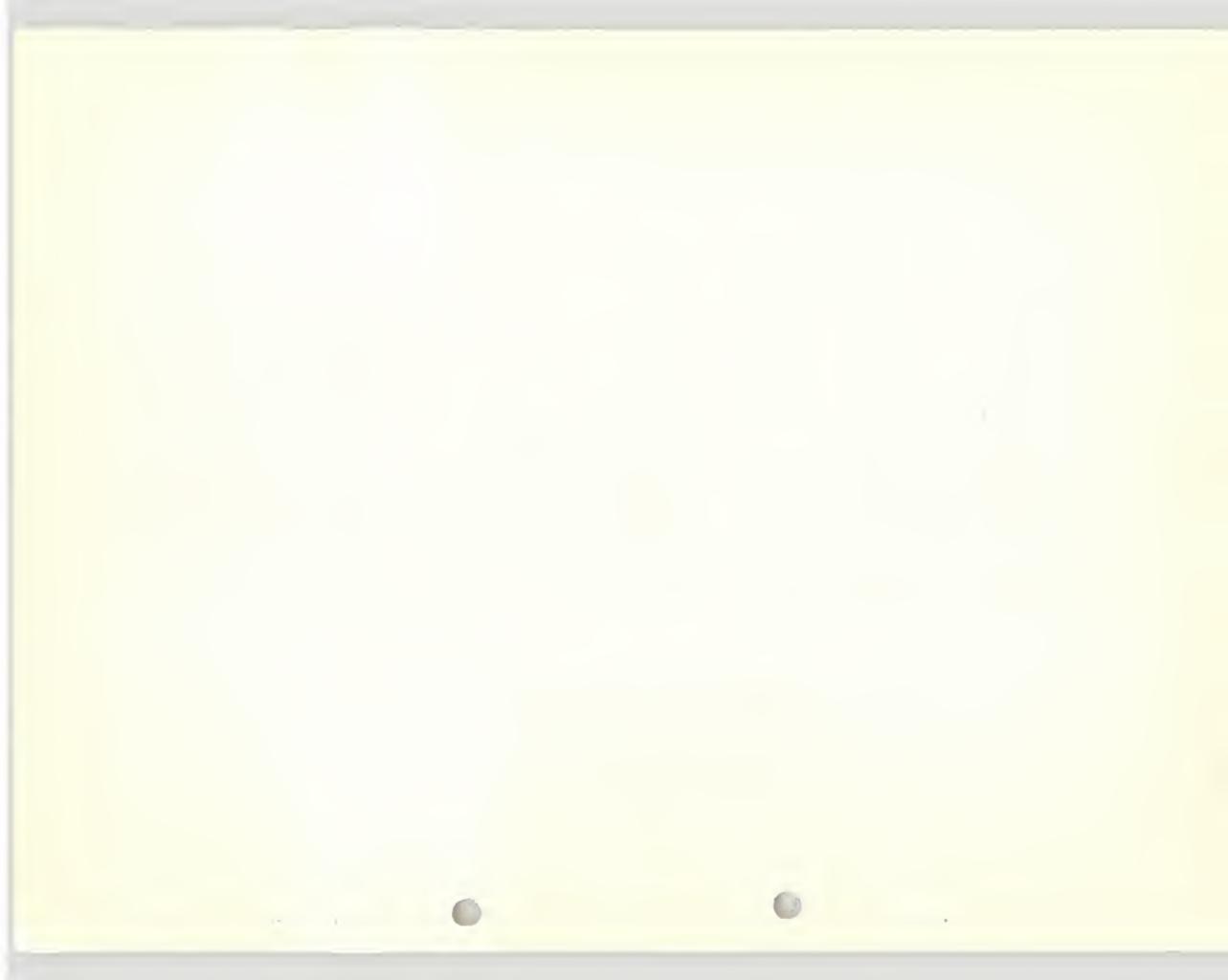


MAY 1, 1952

REVISED FORECASTS

COLUMBIA RIVER BASIN IN MONTANA
PRELIMINARY ESTIMATES OF SEASONAL RUNOFF
(1000's acre feet)

NAME OF STREAM AND STATION	Season April-July	% 10 yr. Average 1941-50	Season April-Sept.	% 10 yr. Average 1941-50
North Fork Flathead near Belton	1,526	102	1,674	99
Middle Fork Flathead near Belton	1,577	105	1,693	105
South Fork Flathead near Columbia Falls	2,018	102	2,135	102
Flathead River at Columbia Falls	5,230	102	5,728	105
Flathead River at Polson	5,283	99	5,861	104
Clark Fork above Bonner	834	117	912	119
Black Foot at Bonner	765	129	893	124
Clark Fork above Missoula	1,599	123	1,805	118
Bitterroot River at Darby	676	143	714	141
Clarks Fork below Missoula	3,403	124	3,679	121
Clarks Fork at St. Regis	4,570	150	4,910	121
Clarks Fork at Plains	10,159	115	11,132	112
Clark Fork at Herron	10,915	119	12,004	117





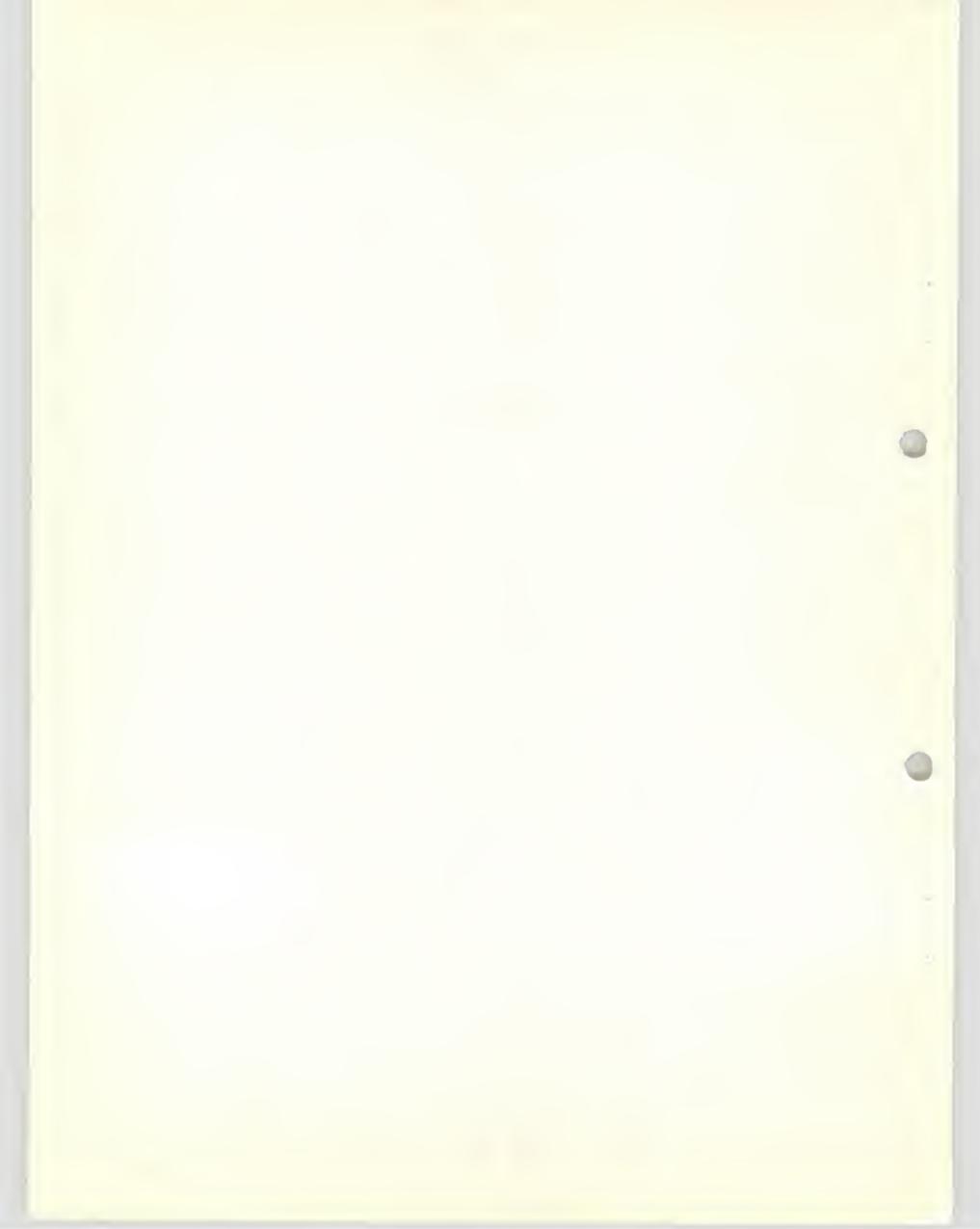
INDEX TO MONTANA & NORTHERN WYOMING SNOW COURSES

3. Figures 1-2-3-4-5 refer to Figures 1, 2, 3, 4, 5, and 6, respectively.

⁴⁵ Powers refer to Agency that oversees the men or men as follows:

SUPPLEMENTAL INDEX LIST OF SNOW SURVEY COURSES
IN ADJACENT BASINS, USED IN THIS REPORT AND
SHOWN ON THE INDEX MAP

DRAINAGE AND SNOW COURSE	Adj. State No.	Montana Number	Elev. Feet	Section Lat.	Twp	Range Long.	Record Began	Measure-ment Dates	Meas-ured By
<u>JEFFERSON</u>									
Kilgore	Idaho 10	11E12	6200	6	12N	39E	1937	1,2,3,4,5	pd. obs
Blue Ridge Mine	5	11E11	6700	27	13N	38E	1938	4	pd. obs
Camp Creek	6	12E3	6800	21	13N	36E	1936	1,2,3,4	1
Moose Creek	8	13D16	6200	22-27	27N	21E	1937	3,4,5	1
Big Springs	3	11E9	6500	34	19N	44E	1936	1,2,3,4,5	10
Island Park	9	11E10	3600	28	13N	43E	1936	1,2,3,4,5	10
Valley View	17	11E8	6500	7	15N	44E	1936	1,2,3,4	10
<u>UPPER YELLOWSTONE</u>	Wyo.								
Lewis Lake Div.	9	10E9	7900	44-13		110-40	1919	1,2,3,4	10
Aster Creek	2	10E8	7700	44-17		110-37	1919	1,2,3,4	10
Tom Thumb Summit		10E7	7900	44-22		110-35	1949	3,4	10
<u>LOWER YELLOWSTONE</u>	Wyo.								
(Wind River)									
Togwotee Pass	12	10F1	9600	29	44N	110W	1936	2,3,4,5	10
Kendall	25	9F12	7900	23	38N	110W	1936	3,4,5	1
Loomis Park	26	10F4	8500	14	37N	111W	1942	3,4,5	1
Yellow Jacket	14	10F5	6775	33	42N	112W	1936	3,4,5	1
Black Rock	2	10F3	8600	4	44N	111W	1936	2, 4	10
Dutch Joe	23	9G6	8700	32	31N	104W	1936	4,5	1
Mulligan Park	24	9G5	8900	17	35N	108W	1936	3,4,5	1
<u>KOOTENAI</u>									
Smith Creek	Idaho 13	16A1	4800	29	64N	3W	1937		4,5
Fernie	Canada								
10			3500	49-31		115-01	1939		
Fernie Ridge	68		5600	49-31		115-00	1952		
New Fernie	10A		4100						
Gray Creek	34		5100	39-37		116-41	1948		
Kimberly	20		3800	49-41		115-59	1945		
Marble Canyon	32		5000	51-12		116-09	1947		
Nelson Creek	19		3050	44-25		117-14	1938		
Sinclair Pass	8A		4500	50-40		115-58	1947		
Sullivan Mine	20A		5100	49-43		116-01	1945		
Upper Elk River	41		4400	50-01		114-56	1947		
<u>UPPER CLARK FORK</u>									
Coyote Hill	Idaho 13B11		4200	12	18N	16W	1952	3,4,5	1
49 Meadows	1	15B10	5000	6	45N	5E	1937	1,2,3,4,5	1
Lookout	10	15B2	5250	4	47N	6E	1921	1,2,3,4,5	1
<u>PEND OREILLE</u>	Idaho								
Mosquito Ridge	9	16A4	5110	5	54N	2E	1937		4,5
Freezout #2		15B10	6800	21	15N	27W	1951	3,4	1
<u>BITTERROOT</u>	Idaho								
Moose Creek	8	13D16	6200	22-27	27N	21N	1937	3,4,5	1
Kit Carson	3	14D3	4700	4	27N	16E	1937	4	1
Savage Pass	7	14C4	6000	18	36N	15E	1937	4	1
Powell Pasture	6	15C3	3700	27	27N	14E	1937	4	1
Packers Mdw.	5	14C2	5700	15	38N	15E	1937	2,3,4,5	1

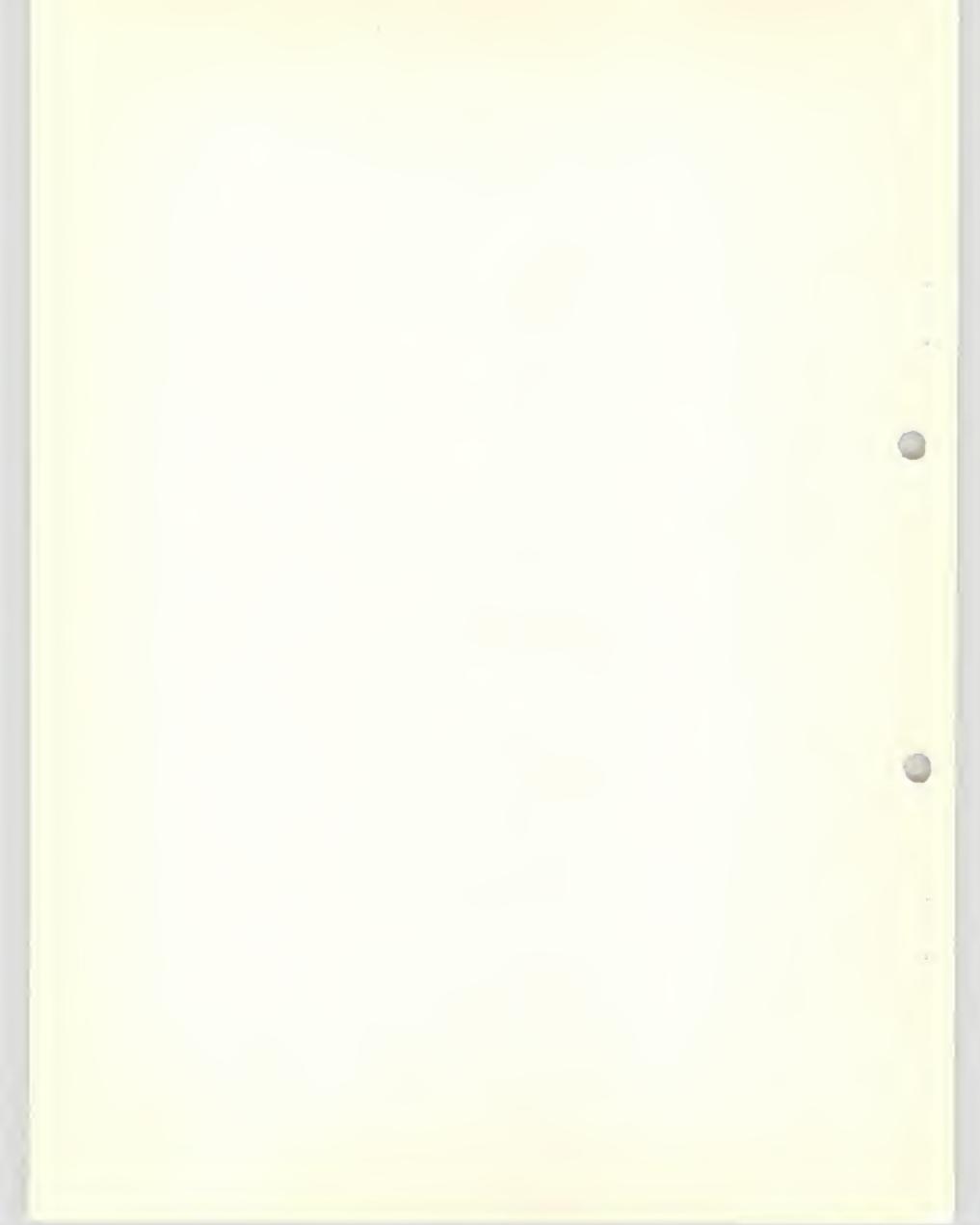


STORAGE IN RESERVOIRS OF MONTANA MAY 1, 1952

MISSOURI RIVER BASIN

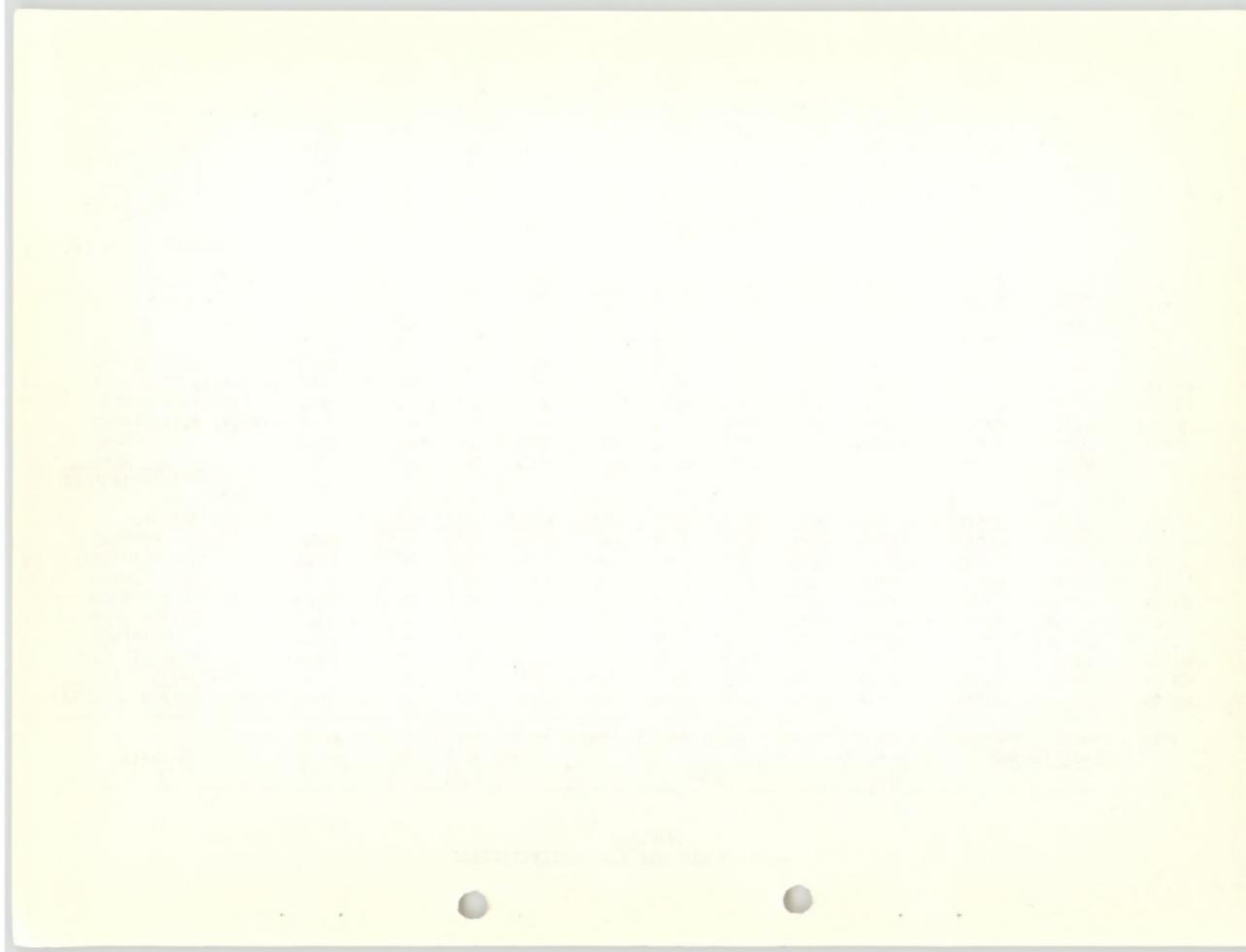
Reservoir Volumes in 1,000's a.f.

RESERVOIR	Location on or diversion from	Usable Capacity	Contents This Yr. May 1 1952	Contents Last Yr. May 1 1951	10-year Average May 1 1941 to 1950
Lima Reservoir	Beaverhead	84.00	84.0	72.0	62.6
Ruby Reservoir	Ruby River	38.85	--	--	27.9
Willow Creek Reser.	Willow Creek	17.76	--	--	--
Hebgen Lake	Madison River	345.00	205.2	261.3	230.4
Ennis Lake	Madison River	41.00	38.4	29.9	33.6
Middle Creek Reser.	Hyalite Creek		--	--	--
Lake Sewall	Missouri River	37.80	26.4	20.5	26.3
Hauser Lake (inc. Lake Helena)	Missouri River	62.50	34.6	52.9	44.3
Lake Helena	Missouri River	10.45	2.2	7.2	3.8
Holter Lake	Missouri River	81.92	57.8	56.5	51.1
Gibson Reservoir	N.Fk. Sun River	105.00	92.6	81.7	69.9
Willow Creek Res.	N.Fk. Sun River	32.30	26.8	27.1	13.4
Pishkun Reservoir	N.Fk. Sun River	32.00	23.5	19.0	20.3
Bynum Reservoir	Teton River				
Lower Two Medicine Lake	Two Medicine River	14.00	0.0	0.0	3.3
Four Horns Lake	Badger Creek	20.00	7.7	8.6	8.5
Swift Reservoir	Birch Creek	30.00	30.2	30.2	26.2
Lake Francis	Dupuyer & Birch Cr.	112.00	98.8	102.2	87.2
Ackley Lake	Judith River	5.82		4.8	4.5
Durand Reservoir	N.Fk. Musselshell	7.01			
Martinsdale Reservoir	S.Fk. Musselshell	23.10			
Deadman Basin Reservoir	Musselshell River	52.50			
Fort Peck Reservoir	Missouri River	19,000.00	13,630.0	13,400.0	10,202.2
Fresno Reservoir	Milk River	127.20	133.1	132.5	76.5
Nelson Reservoir	Milk River	66.80		18.5	31.2
Mystic Lake	W. Rosebud Creek	20.80	2.9	1.3	3.4
Cooney Reservoir	Red Lodge Creek	27.50	18.3	16.5	14.3
Tongue River Reservoir	Tongue River	73.90	21.4	15.0	19.1
Sherburne Lake	Swiftcurrent Cr.	66.10		39.9	24.6
<u>YELLOWSTONE RIVER BASIN, WYOMING</u>					
Buffalo Bill Reservoir	Shoshone River	456.60	233.7	236.2	271.0
Boysen Reservoir	Wind River	819.80	233.4	--	--
Pilot Butte Reservoir	Wind River	30.10	19.1	21.0	20.8
Bull Lake Reservoir	Wind River (Bull Creek)	155.00	33.9	71.5	49.4
<u>COLUMBIA RIVER BASIN</u>					
Georgetown Lake	Flint Creek	31.00	21.6	21.4	21.4
E.Fk. Rock Creek Res.	E.Fk. Rock Creek	16.04	--	--	--
Nevada Creek Res.	Nevada Creek	12.80	--	--	--
W. Fk. Bitterroot Res.	W. Fk. Bitterroot Riv.	31.70	--	--	--
Como Lake	Rock Creek	34.80	20.8	16.6	18.9
Hungry Horse Reservoir	S.Fk. Flathead Riv.	3,000.00	216.7	--	--
Flathead Lake	Flathead River	1,791.00	1,212.0	990.6	949.1
Little Bitterroot	Little Bitterroot*	36.10	36.1	36.1	14.9
Dry Fork Reservoir	Dry Fork Creek*	6.70	6.4	5.8	4.2
Mission Valley Reservoir	Flathead Irr. Project**	98.60	67.2	58.8	47.0
Lower Jocke Lake	Jocke Creek	7.6	2.6	--	--
* Sum of two reservoirs on Little Bitterroot					
* Sum of two reservoirs on Dry Fork Creek					
** Sum of eight (8) reservoirs on Project					



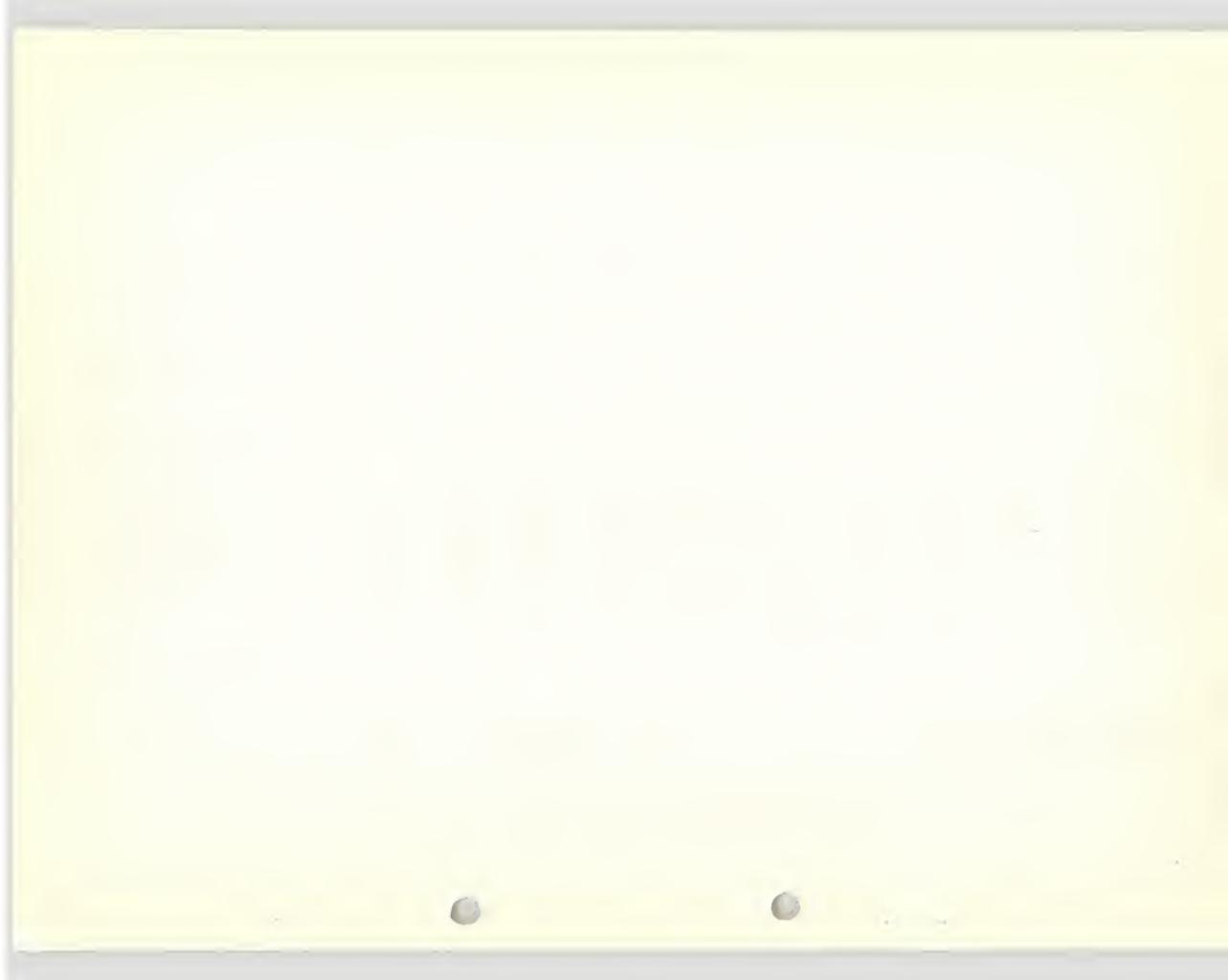
PRECIPITATION DATA FOR MAY 1, 1952
MONTANA

Station	Elev- ation	1951					1952					1952		
		Precipitation					Apr.	Dept. from Normal	1951-52	Accum. Normal	Precip. Dept.	1951-52	Normal	Dept.
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.					1951-52	Normal	Dept.
WEST OF DIVIDE -Fortine	3000	3.63	.92	2.49	1.39	0.79	0.39	0.48	-0.51	10.09	8.99	+1.10		
Butte (Airport)	5533	0.96	.40	1.18	.29	0.85	1.16	0.34	-0.72	5.18	4.19	+1.29		
Phillipsburg	5280	.63	.66	2.12	.26	0.98	1.12	0.01	-1.24	5.78	6.28	-0.50		
Hamilton	3529	1.14	.77	1.11	.31	0.94	0.39	0.06	-0.81	5.02	5.53	-0.51		
West Glacier	3154	4.92	2.25	4.25	2.51	1.29	1.13	0.27	-1.23	16.62	16.16	+0.46		
Summit (Marias)	5213	6.20	3.20	4.65	4.35	2.15	2.55	0.65	-1.63	23.75	19.82	+3.93		
Ovando 1 SW	4101	1.57	1.37	2.08	.71	0.93	1.13	0.03	-0.92	7.82	9.66	-1.84		
Trout Creek	2485	6.50	3.11	4.74	3.81	2.30	1.71	0.33	-1.35	22.50	21.45	+1.05		
Thompson Falls	2435	3.29	2.16	1.89	.82	1.17	0.44	0.18	-1.26	9.95	13.01	-3.06		
Average (8)		3.15	1.74	2.79	1.63	1.27	1.24	0.26	-1.08	11.89	11.73	+0.16		
<u>CENTRAL DIVISION</u>														
Babb	4300	2.91	.24	1.49	.25	0.89	0.48					7.64		
Havre	2488	1.00	.25	1.02	.12	0.81	0.47	0.16	-0.83	4.13	4.62	-0.49		
Great Falls (Airport)	3664	1.72	.41	1.06	.34	1.63	0.76	0.30	-0.85	6.22	5.38	+0.84		
Helena (Airport)	3893	.79	.31	1.08	.15	0.56	1.27	0.37	-0.76	4.53	4.39	+0.14		
Lewistown (Airport)	4132	1.68	.67	1.50	.39	0.78	0.48	0.37	-0.90	5.87	4.57	+1.30		
Livingston	4485	3.74	.48	1.05	1.08	1.00	0.57	0.53	-0.79	8.10	5.83	+2.72		
Wisdom	6058	1.71	.57	1.50	.19	1.06	0.99	0.60	-0.50	6.38	5.67	+0.71		
West Yellowstone	6669	3.66	1.66	3.85	3.34	1.75	2.05	0.24	-1.60	16.53	11.56	+1.97		
Mystic Lake	6558	3.58	.75	1.66	1.22	1.30	1.36	2.12	-0.62	11.99	11.47	+0.52		
Average (9)		2.21	.59	1.55	.85	1.09	0.94	0.59	-0.87	7.97	7.12	+0.85		
<u>EASTERN DIVISION</u>														
Malta	2255	.92	.03	.16	.11	0.69	0.53					3.78		
Fort Peck	2180	.53	.27	.55	.17	1.06		0.16	-0.92			3.73		
Medicine Lake	1962	.49	.07	.27	.22	0.48	0.33	0.04	-0.85	1.90	3.29	-1.39		
Circle	2428	.73	.22					0.15	0.02	-1.12		5.59		
Billings #2	3139	.86	.16	.55	.19	0.48	0.45	0.52	-0.78			3.21	5.74	-2.53
Wiles City	2392	.69	.16	1.14	.42	0.92	0.58	0.10	-1.02	4.31	5.23	-0.92		
Glendive	2076	.63	.38	.60	.25	1.23	0.66	0.06	-1.06	3.81	4.71	-0.90		
Brodus	3026	1.78	.61	.79	.14	0.63	0.70	0.10	-1.13	4.78	5.29	-0.51		
Average (8)		.83	.28	.62	.27	.78	0.49	0.14	-1.03	3.60	4.67	-1.07		



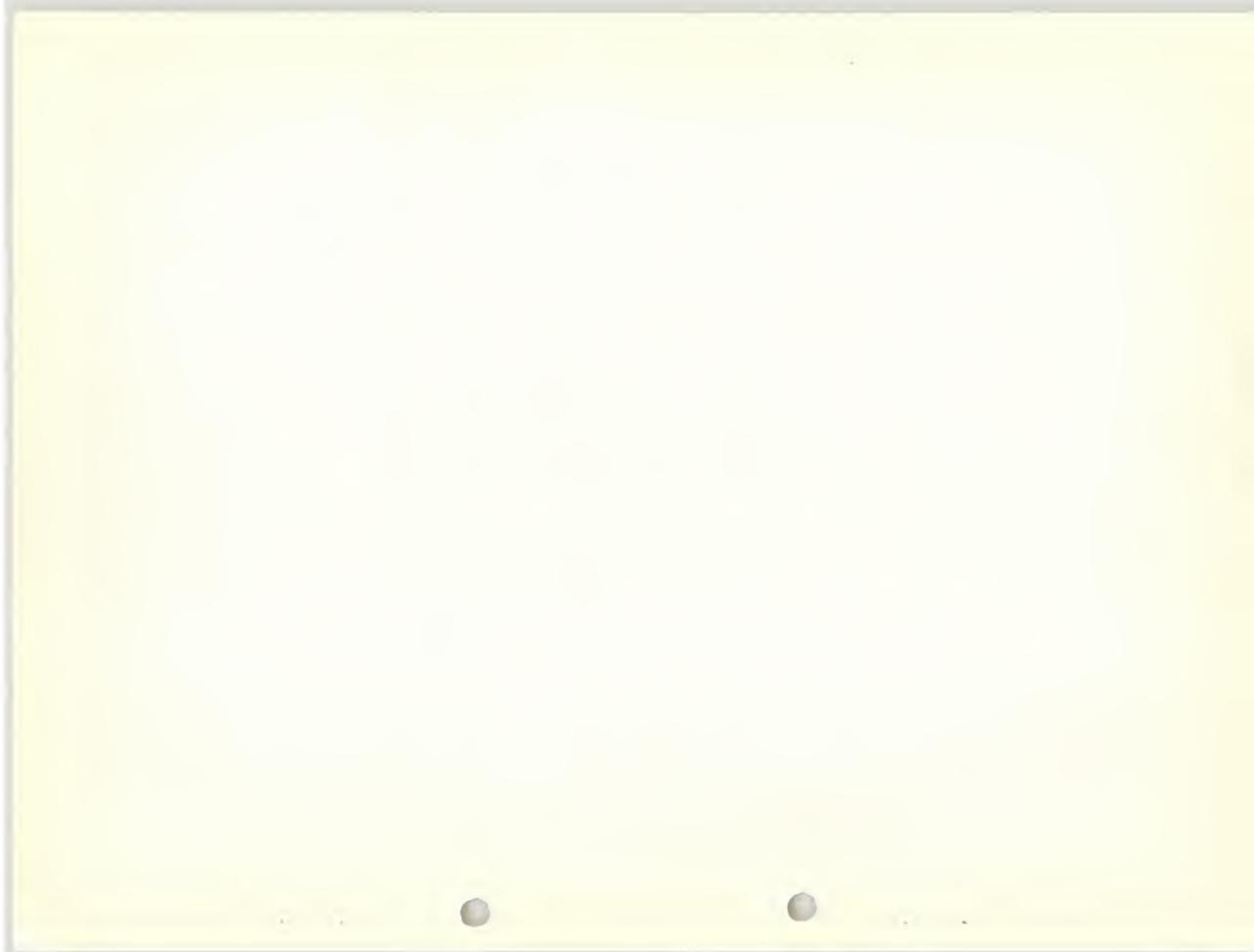
PRECIPITATION DATA FOR MAY 1, 1952
NORTHERN WYOMING

Station	Elev- ation	1951						1952						Dept. from Norm. 1	1952			
		Precipitation						Accum. Precip.							1951-52	Norm.	Dept.	
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.					
<u>BIG HORN RIVER BASIN</u>																		
Cody	4984	1.14	0.39	0.30	0.30	0.35	0.51	0.59	-0.44	3.58	3.72	-0.14						
Lovell	3825	1.09	0.12	0.39	0.22	0.17	0.41	0.56	-0.04	2.96	2.81	+0.18						
Worland	4061	0.31	0.09	0.10	0.41	0.19	0.17	1.21	+0.21	2.48	3.35	-0.87						
Sunshine 4 SW	6930	1.82	0.16	0.18	0.07	0.94	0.51						7.75					
Thermopolis	4336	0.93	0.28	0.29	0.13	0.13	0.20	1.62	+0.40	4.58	5.88	-1.30						
Riverton	4954	0.67	0.09	0.25	0.05	0.47	0.47	1.23	-0.07	3.23	4.03	-0.80						
Dubois	6917	0.21	0.12	0.53	0.35	0.38	0.23	1.22	+0.17	3.07	4.06	-0.99						
Average		0.89	0.18	0.29	0.24	0.52	0.33	1.07	-0.35	3.31	4.52	-1.21						
<u>TONGUE RIVER BASIN</u>																		
Sheridan	4021	1.37	0.15	0.68	0.15	1.39	0.85	0.80	-1.12	5.39	6.97	-1.58						
<u>POWDER RIVER BASIN</u>																		
Arvada	3680	0.58	0.18	0.45	0.05	0.50	0.61	0.02	-1.24	3.29	4.62	-1.33						
Metz Ranch	5280	0.95	0.11	0.19	0.12	0.30	0.73	1.13	+0.46	3.53	5.05	-1.52						
Gillette	4542	1.06	0.50	0.40	0.40	0.50	0.85	0.15	-1.60	3.86	6.21	-2.35						
Nine Mile Creek	5000	0.49	0.35	0.18	0.30	0.77	0.88						4.98					
Mid West	4850	0.41	0.16	0.78	0.03	0.66	0.70	0.36	-1.33	3.10	6.09	-2.99						
Average		0.70	0.26	0.40	0.15	0.76	0.72	0.42	-1.18	3.44	5.39	-1.95						



MONTANA SNOW SURVEYS APRIL 15, 1952

COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1952	Snow Depth (In.) 1952	Water Content (Inches)						Y e a r s	
					Apr. 15 1952	Past Records			Average date Apr. 15			
					1951	1950	1949	1948	Avg.	%Avg.		
<u>KOOTENAI</u>												
Baree Mountain	15-B-1	6000	Apr. 15	101	16.0	---	---	51.0	---	---	---	2
Blue Bird Basin	14-A-1	6800	Apr. 15	97	39.7				37.7			2
Red Mountain	15-A-1	6000	Apr. 15	45	18.3	---	---	---	---	---	---	1
Smith Creek	16-A-1	4800	Apr. 15	95	10.0	---	---	---	---	---	---	1
<u>FLATHEAD RIVER</u>												
Desert Mountain	13A2	5600	Apr. 14	43	16.8	---	---	17.0	---	---	---	2
Maries Pass	13A5	5250	Apr. 15	46	17.6	---	---	---	---	---	---	1
Spotted Bear Mt.	13B2	7000	Apr. 16	32	12.7	---	---	---	---	---	---	1
Strawberry Lake	13B10	6500	Apr. 16	106	48.9	---	---	---	---	---	---	1
Trinkus Lake	13B1	6500	Apr. 16	87	35.2	---	---	---	---	---	---	1
Trout Lake	13A12	3600	Apr. 16	31	13.2	---	---	---	---	---	---	1
Twin Creeks	13B11	3580	Apr. 16	13	5.8	---	---	---	---	---	---	1
Upper Holland Lake	13B5	7000	Apr. 16	82	35.7	---	---	---	---	---	---	1
Basin Creek	13B14	5000	Apr. 16	23	7.7	---	---	---	---	---	---	1
Holbrook	14B13	4530	Apr. 16	16	6.0	---	---	---	---	---	---	1
<u>UPPER CLARK FORK</u>												
Coyote Hill	13B11	4200	Apr. 14	23	12.0	---	---	---	---	---	---	1
Rainy Lake	13B6	4300	Apr. 14	26	14.2	---	---	---	---	---	---	1
Slide Rock Mt.	13C2	7100	Apr. 21	44	16.2	---	---	---	---	---	---	1
Stuart Mt. #1	13C1	7400	Apr. 10	89	36.8	---	---	22.2	---	---	---	2
Tennile, Lower	12C2	6250	Apr. 15	22	6.1	---	---	---	---	---	---	1
Tennile, Middle	12C3	6800	Apr. 16	37	11.1	---	---	---	---	---	---	1
Tennile, Upper	12C4	8000	Apr. 16	44	14.1	---	---	---	---	---	---	1
Lookout	15B2	5350	Apr. 15	85	37.8	---	---	45.0	---	---	---	2
49-Meadows	15B10	5000	Apr. 14	85	39.0	---	---	---	---	---	---	1

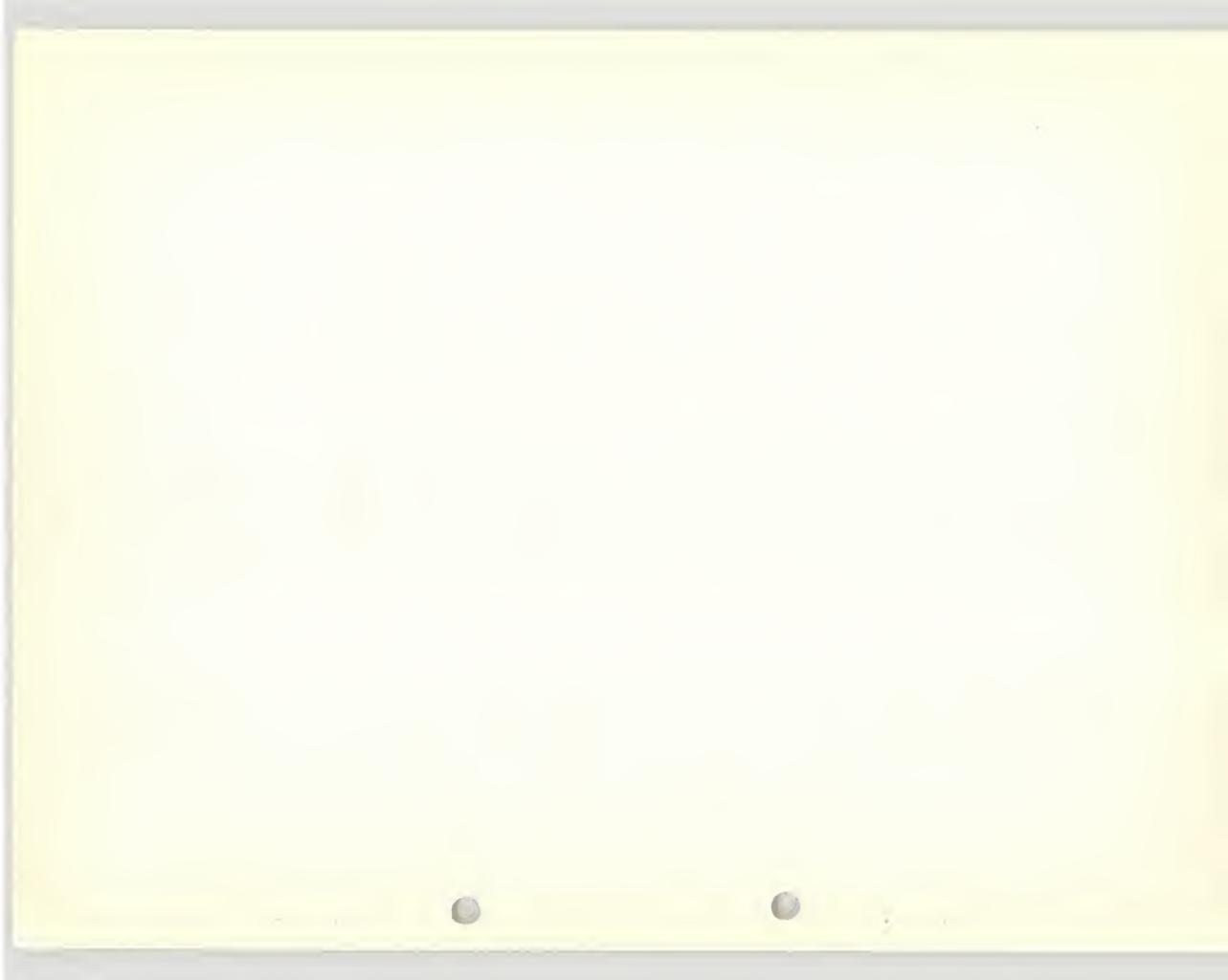


MONTANA SNOW SURVEYS APRIL 15, 1952

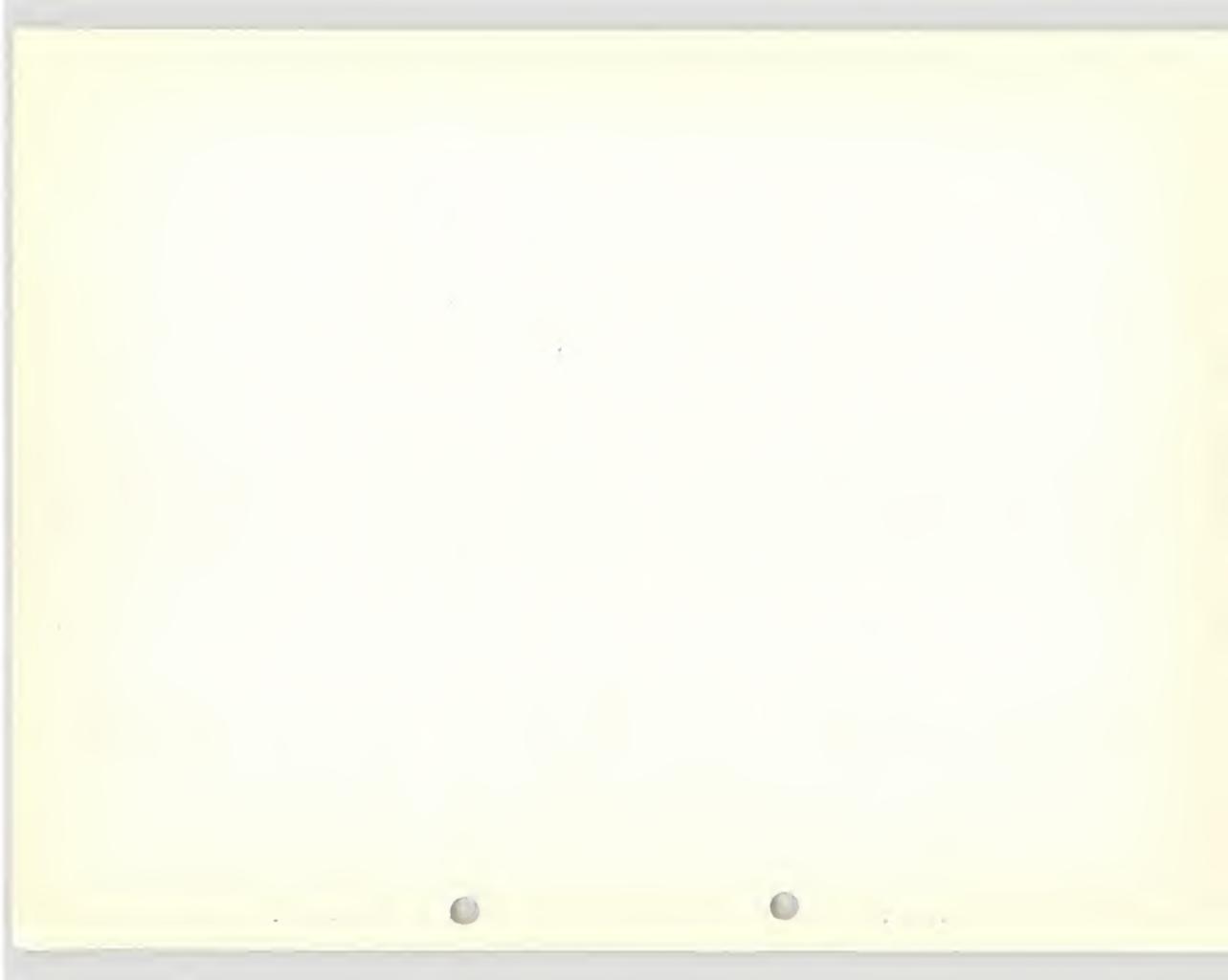
COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date	Snow	Water Content (Inches)					Y e a r s	
			Survey	Depth (in.)	Apr. 15	Past Records					
			1952	1952	1952	1951	1950	1949	1948	Apr. 15	
<u>PEND OREILLE</u>											
Baree Mountain	15-B-1	6000	Apr. 15	101	46.0	---	---	51.0	---	---	2
Freezout Summit	15-C-3	7000	Apr. 10	96	37.9	---	---	39.6	---	---	2
Hoodoo Creek	13-C-1	6200	Apr. 10	111	49.2	---	---	---	---	---	2
Mosquito Ridge	16-A-4	5110	Apr. 15	85	38.4	---	---	---	---	---	2
<u>BITTERROOT</u>											
Gibbons Pass	13D2	7100	Apr. 15	72	29.0	---	---	---	---	---	1
Nezperce Camp	14-D2	5580	Apr. 15	44	17.7	---	16.7	14.2	---	16.2	109
Nezperce Pass	14D1	6575	Apr. 16	58	22.1	---	---	19.1	---	---	2
Stuart Mt. #1	13C1	7400	Apr. 10	89	36.8	---	---	22.2	---	---	2
Packers Meadow	14C2	5700	Apr. 10	56	25.2	---	---	30.0	---	---	2
<u>APRIL 1, 1952</u> CORRECTIONS AND MEASUREMENTS RECEIVED TOO LATE FOR PUBLICATION											
Gibbons Pass	13D2	7100	Mar. 30	83	32.4	28.3	30.0	29.0	23.0	22.8	142
Stuart Mt. #1					Measured April 10, shown with April 15 data						
Hoodoo Creek					Measured April 10, shown with April 15 data						
Freezout Summit					Measured April 10, shown with April 15 data						
Packers Meadow					Measured April 10, shown with April 15 data						



MONTANA SNOW SURVEYS MAY 1, 1952



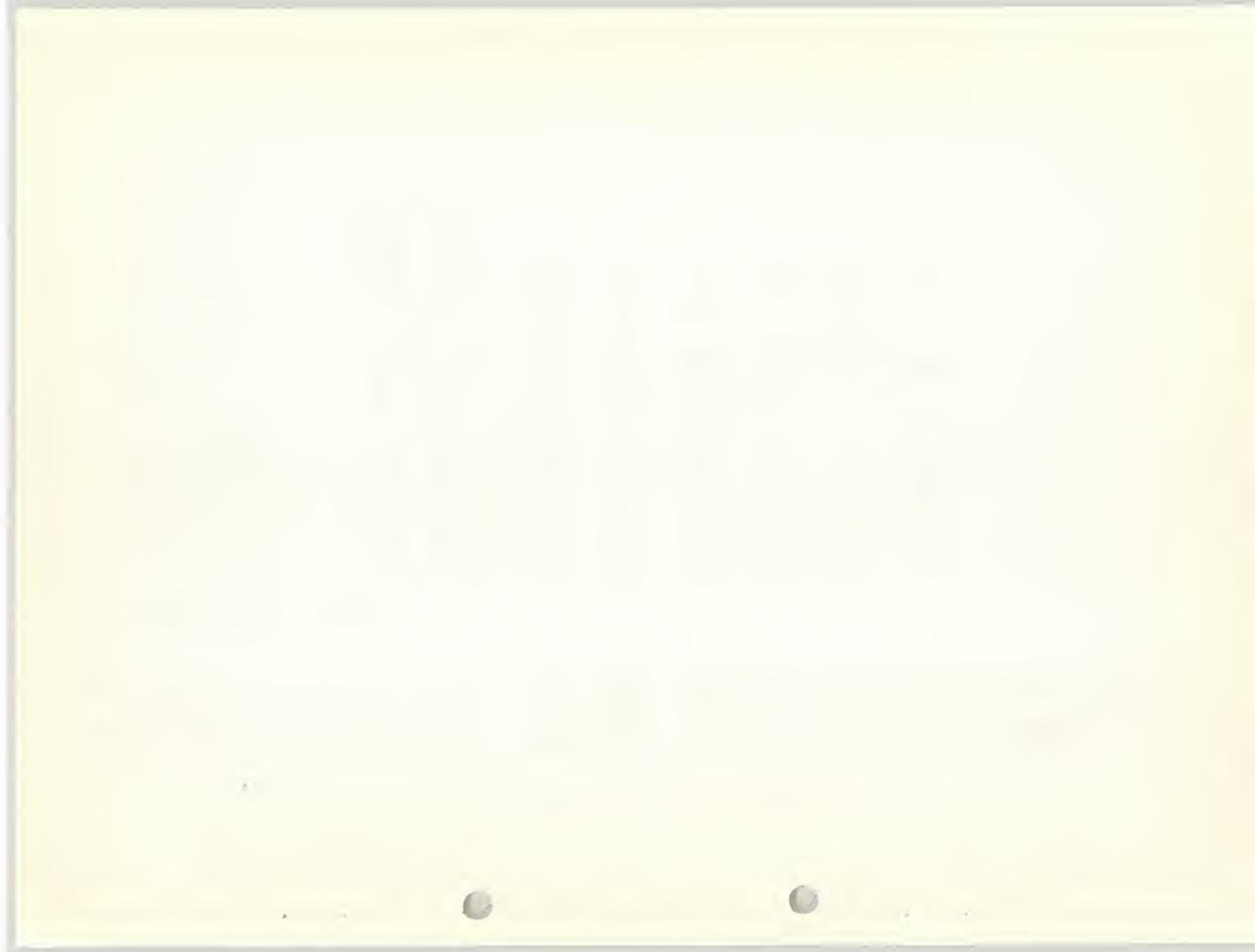
MONTANA SNOW SURVEYS MAY 1, 1952



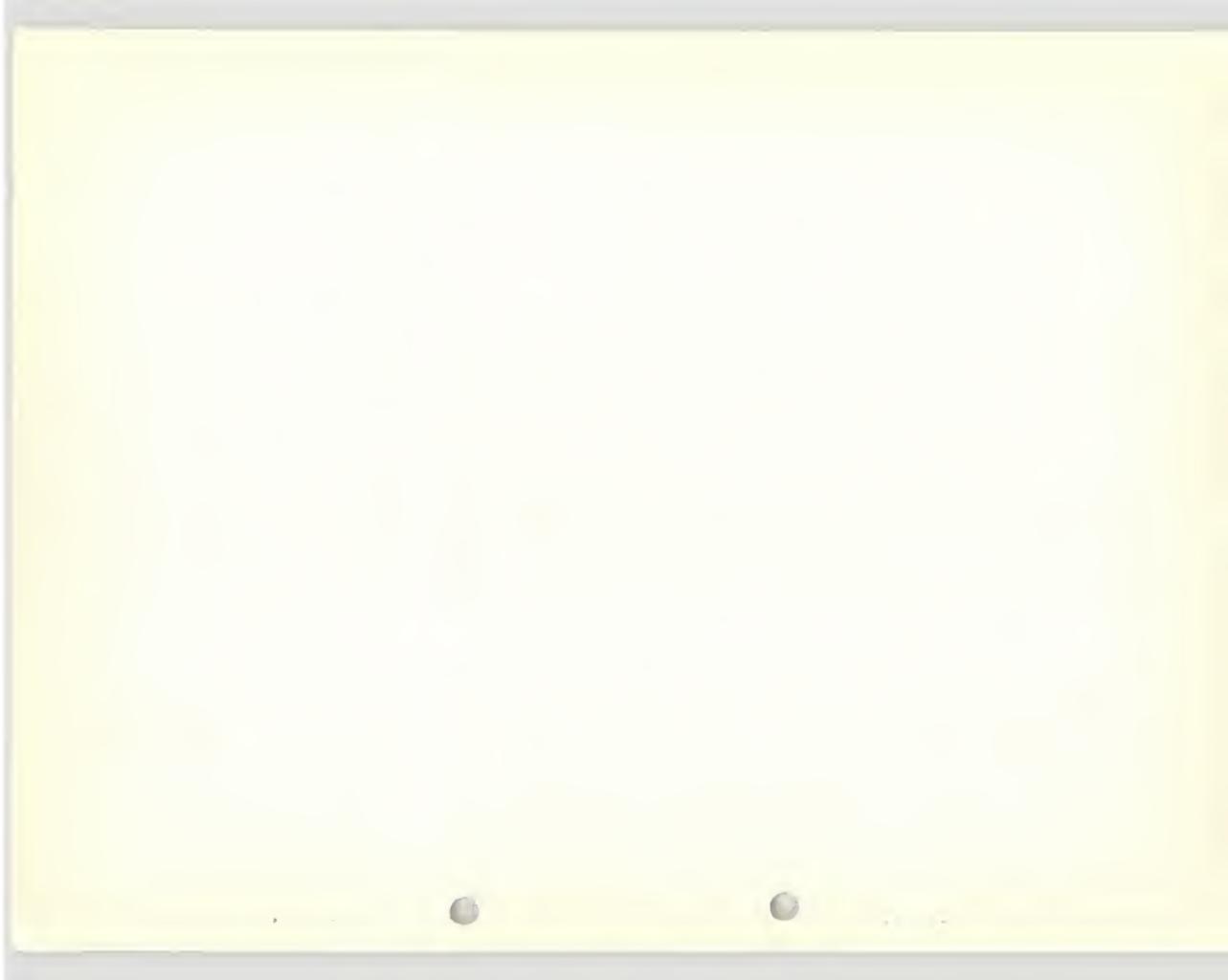
WYOMING SNOW SURVEYS MAY 1, 1952

MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey	Snow Depth (In.)	May 1 1952	Water Content (Inches)						Years	
			1952	1952		Past Records				Average data			
						1951	1950	1949	1948	Avg.	%Avg.		
<u>LOWER YELLOWSTONE</u> (Wind River - above Div. Dam)													
Brooks Lake #3	10F2	9200	Apr. 29	63	29.1	34.2	34.2	25.5	29.5	25.3	115	17	
Burroughs Creek	9F6	8800	Apr. 29	30	10.4	25.3	17.7	11.2	--	16.1	65	4	
Du Noir	9F2	8750	May 1	7	2.5	11.6	11.7	2.1	7.1	6.9	36	11	
Geyser Creek	9F3	8500	Apr. 30	7	2.3	10.3	7.8	0.0	--	5.2	44	4	
Little Warm	9F4	9500	Apr. 30	50	17.8	28.1	26.2	17.3	--	22.4	80	4	
Sheridan Creek	9F1	7500	Apr. 29	No Snow	6.0	5.0	0.0	3.0	2.1	--	12		
T-Cross Ranch	9F5	8000	Apr. 24	13	5.3	7.7	6.2	0.0	2.9	3.6	147	11	
*Togwotee Pass	9F1	9600	May 1	68	30.8	40.4	--	29.5	33.2	33.5	134	4	
Dinwoodie	9F10	10000	Apr. 28	42	13.5	18.6	17.2	10.6	--	15.2	89	4	
Dry Creek	9F9	9500	Apr. 28	20	5.9	11.5	10.6	3.9	--	8.0	74	4	
Hobbs Park	9G2	10000	Apr. 25	72	26.8	25.8	30.3	21.3	--	26.0	103	4	
Mosquito Park	9G3	9500	Apr. 25	38	12.9	8.1	12.7	5.4	--	7.0	185	7	
St. Lawrence	9F11	9000	Apr. 27	28	9.3	6.9	10.3	4.8	--	7.8	119	9	
Trout Creek	9G1	8400	Apr. 25	23	8.5	0.0	1.5	0.0	--	-		4	
*Kendall	9F12	7900											
*Loomis Park	10F5	8500											
*Black Rock	10F3	8600											
*Yellow Jacket	10F5	6775											

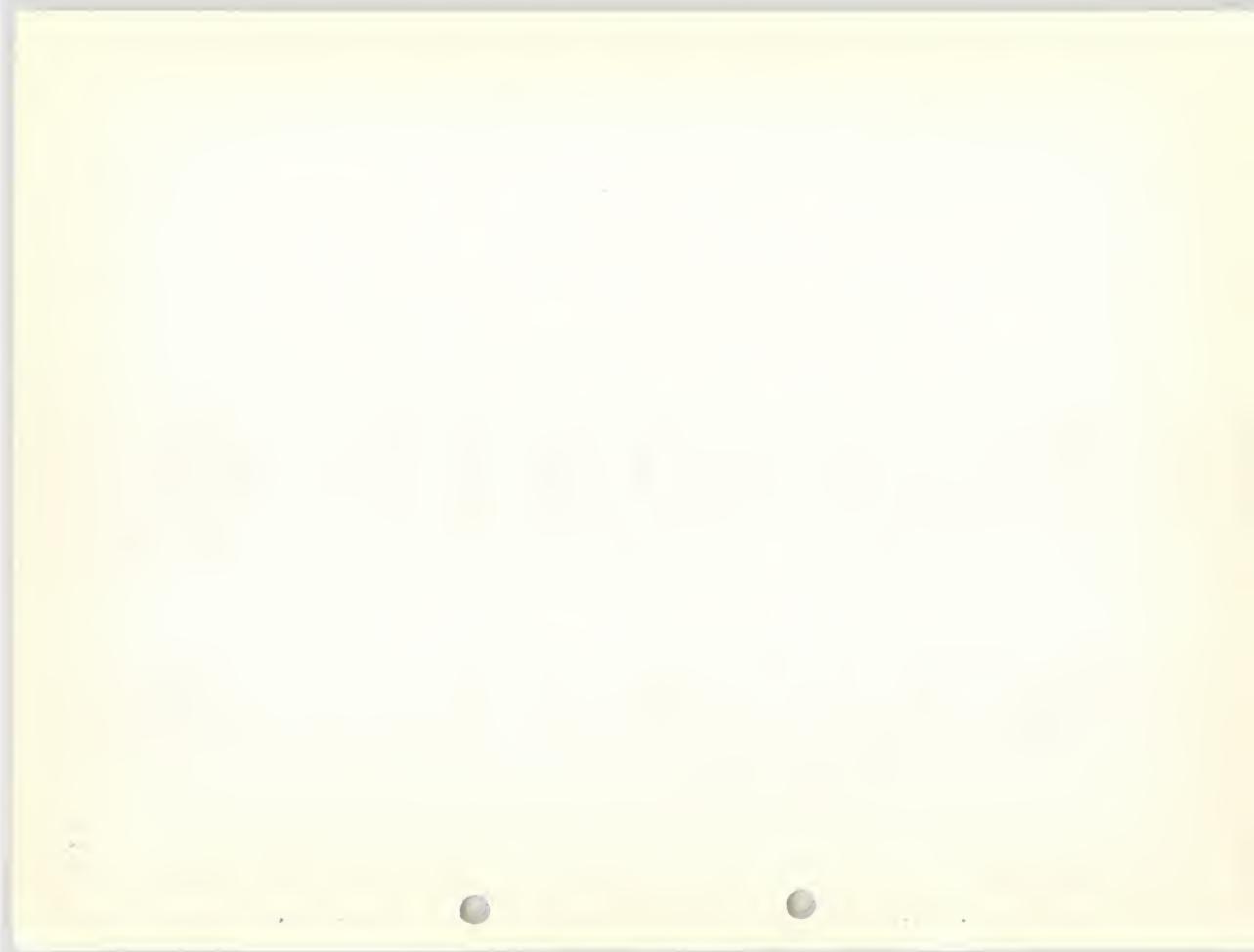
* Adjacent Basin



WYOMING SNOW SURVEYS, MAY 1, 1952

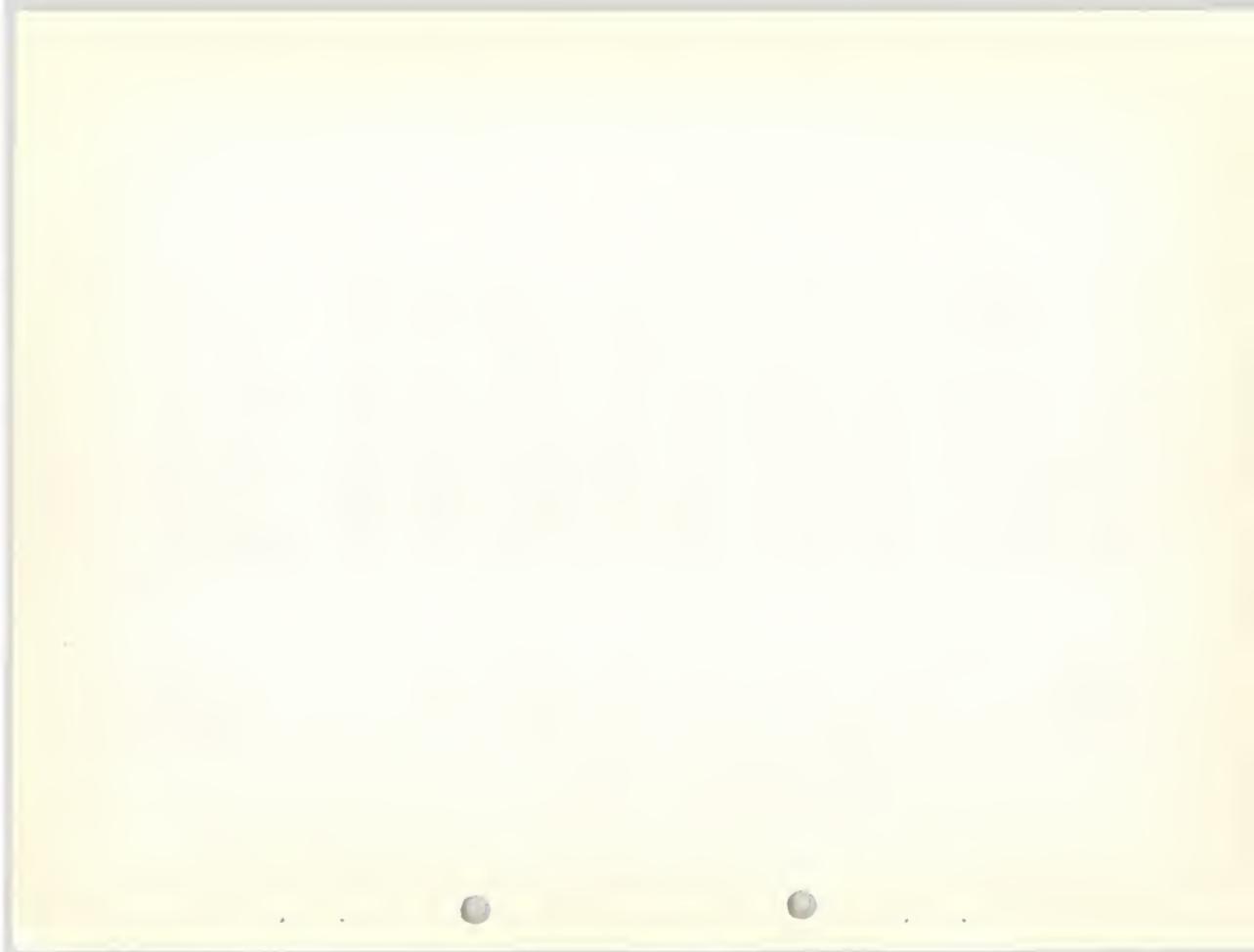


WYOMING SNOW SURVEYS MAY 1, 1952



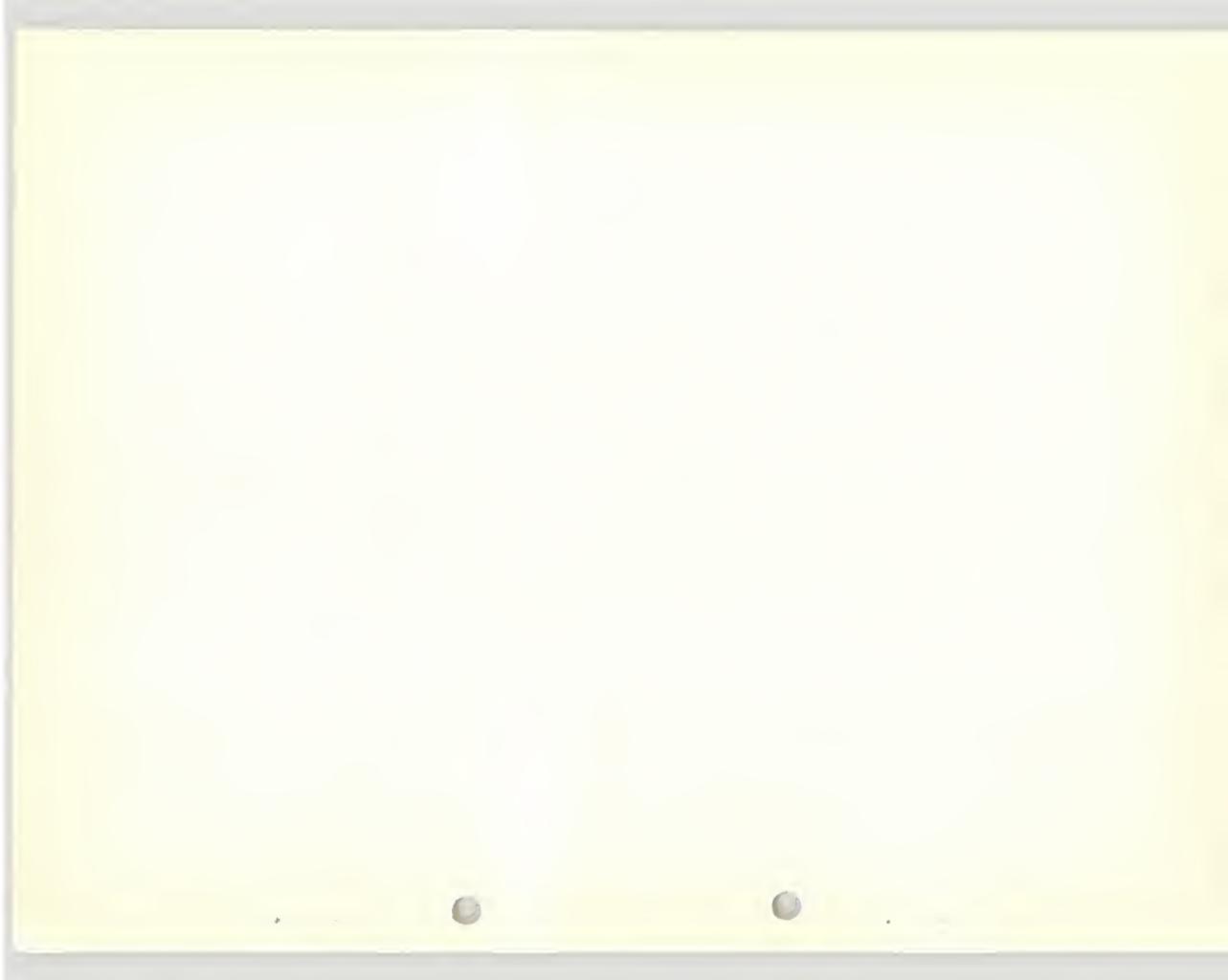
MONTANA SNOW SURVEYS MAY 1, 1952

COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey	Snow Depth (In.)	Water Content (Inches)				Average Data May 1 Avg.	Y e a r s		
			1952	1952	May 1	Past Records						
			1952	1950	1949	1948						
<u>KOOTENAI</u>												
Baree Mountain	15B1	6000	Apr. 30	72	37.6	40.4	68.1	51.1	47.2	40.0	94	16
Blue Bird	14A1	6800	Apr. 28	73	34.9	44.4	53.7	36.3	51.2	36.1	96	14
Brush Creek	14A4	5000	Apr. 30	7	2.3	8.6	17.1	--	--	5.8	40	9
Fernie	Canada	3500	Apr. 29	00	0.0	2.1	7.7	0.0	3.9	2.3	--	6
New Fernie	Canada	5100	Apr. 29	00	0.0	11.1	--	--	--	--	--	2
Fernie Ridge	Canada	5600	Apr. 29	35	16.3	--	--	--	--	--	--	1
Ferguson	Canada	3000	Apr. 30	24	12.3	13.6	18.9	11.7	18.5	11.8	83	6
Marble Canyon	Canada	5000	Apr. 30	21	7.3	19.1	16.7	10.2	12.1	13.1	55	5
Red Mt., Montana	15A1	6000	May 1	23	9.4	19.9	31.1	16.3	16.2	15.5	63	15
Sinclair Pass	Canada	4500	Apr. 30	No Snow		3.1	3.2	.2	.8	1.5	--	5
Smith Creek	16A1	4800	May 2	65	32.6	38.7	55.8	40.2	--	34.8	94	14
Sullivan Mine	Canada	5100	May 1	17	7.2	12.9	16.6	7.9	9.9	10.9	66	5
Gray Creek	Canada	5100	Apr. 29	39	15.5	19.7	21.5	18.4	20.0	16.6	93	5
Sandon	Canada	3500	Apr. 25	No Snow		0.0	8.3	0.0	4.2	2.1	--	6



MONTANA SNOW SURVEYS MAY 1, 1952

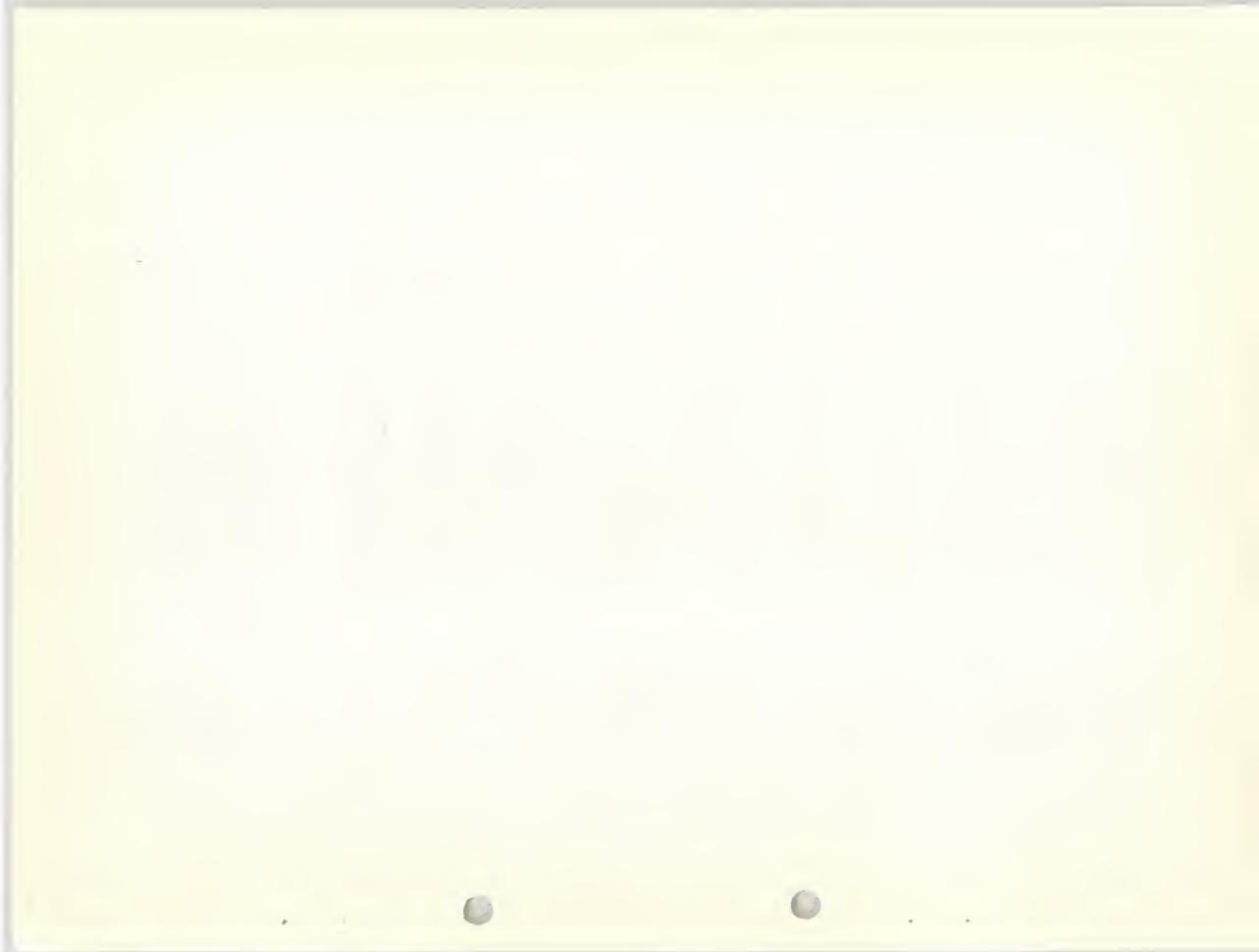
COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date	Snow		Water Content (Inches)						Years		
			of	Depth	(In.)	May 1	Past Records			Average Data				
			1952	1952	1952	1951	1950	1949	1948	Avg.	%Avg.			
<u>FLATHEAD RIVER</u>														
Blue Bird	11A1	6800	Apr. 28	73	34.9	14.4	53.7	36.3	51.2	36.1	97	14		
Basin Creek	13B14	5000	May 1	No Snow		2.1	--	--	--	--	--	2		
Big Creek	13B3	6750	Apr. 30	82	42.1	48.0	60.0	--	--	44.6	95	4		
Brush Creek	14A1	5000	Apr. 30	7	2.3	8.6	17.1	--	--	5.8	40	9		
Cattle Queen	13A1	4700	May 1	No Snow								1		
Coyote Hill	13B11	4200	May 1	No Snow										
Desert Mountain	13A2	5600	Apr. 29	19	7.9	14.8	21.7	10.8	14.9	10.2	78	16		
Goat Mountain														
Hall Roaring Div.	11A3	5700	Apr. 29	52	25.3	21.0	37.4	26.7	31.0	26.7	97	11		
Holbrook	14B13	4530	May 1	No Snow		1.4						2		
Kishenehn	11A2	4300												
Limestone Pass	13B8	7600	Apr. 30	68	33.0	40.3	29.0	--	--	34.1	97	3		
Logan Creek	14A5	4300	Apr. 27	No Snow		1.0	7.1	--	3.4	1.1	--	14		
Marias Pass	13A5	5250	Apr. 29	24	10.5	19.7	26.3	12.1	15.3	9.9	106	18		
North Fork Jocko	13B7	6330	Apr. 29	71	35.1	13.4	59.6	--	--	35.6	99	5		
Quintonkon	13A13	3800	May 1	8	4.1	4.6	--	--	--	--	--	2		
Rainy Lake	13B6	4300	May 1	No Snow		0.0	10.2	T	0.0	--	--	6		
Strawberry Lake	13B10	6500	May 2	76	39.7	27.9	58.8	35.4	--	40.4	98	4		
Trinkus Lake	13B1	6500	May 1	80	40.6	32.9	53.1	36.5	--	40.8	99	4		
Trout Lake	13A12	3600	Apr. 30	9.1	4.3	--	20.2	--	14.9	--	--	3		
Twin Creeks	13B11	3580	May 1	No Snow		0.0	--	--	--	--	--	2		
Upper Holland Lake	13B5	7000	May 1	64	34.0	33.5	--	--	--	--	--	2		
Snow Lab #16	13A9	5200	May 1	35	15.4	22.0	28.0	17.0	17.9	20.7	74	6		



MONTANA SNOW SURVEYS MAY 1, 1952

COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1952	Snow Depth (In.) 1952	May 1 1952	Water Content (Inches)					Average data May 1 Avg.	Years		
						Past Records								
						1951	1950	1949	1948					
<u>UPPER CLARK FORK</u>														
Coyote Hill	13B11	4200	May 1	No Snow	---	---	---	---	---	---	---	1		
Chessman Res.	1205	6200	May 1	No Snow	3.0	7.8	0.0	4.6	1.7	---	---	17		
North Fork Jocko	13B7	6330	Apr. 29	71	35.1	43.4	59.6	---	---	35.6	99	5		
Pipestone Pass	12D1	7200	May 2	2	0.3	6.3	3.2	1.0	---	2.2	15	13		
Rainy Lake	13B6	4200	May 1	No Snow	---	---	---	---	---	---	---	---		
Slide Rock Mt.	1302	7100	May 5	32	13.5	---	---	12.2	---	10.5	122	12		
Stemple Pass	13C1	6900	May 1	12	4.2	11.2	14.2	6.3	8.3	6.0	70	18		
Stuart Mt. #1	13C1	7100	Apr. 30	61	31.1	---	---	22.2	31.1	26.2	119	14		
Tenmile, Lower	12C2	6250	May 3	0	0.0	5.1	8.9	0.2	2.1	2.0	---	17		
Tenmile, Middle	12C3	6800	May 3	5	1.7	11.2	16.3	3.5	8.9	6.7	17	18		
Tenmile, Upper	12C4	8000	May 3	16	5.9	14.8	18.8	7.1	14.6	10.2	58	17		
*19 Meadows	15B10	5000												
*Above Burke		4100												
*Lookout	15B2	5250	May 1	54	25.9	27.5	45.1	21.4	34.8	22.4	115	16		
*Above Roland	15B7	4350												
*Below Roland	15B6	3770												
*Sunset	15B9	5600												

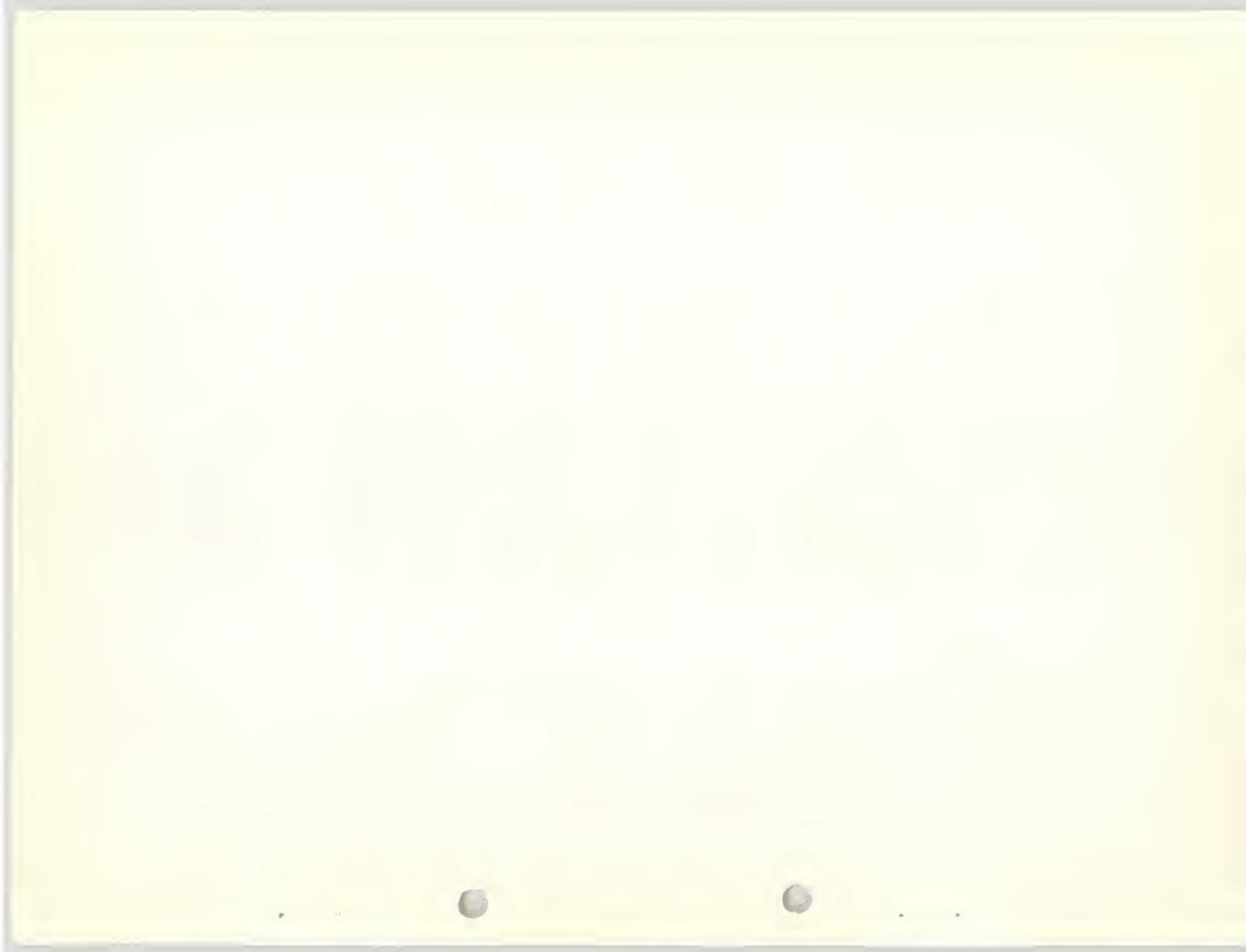
* Adjacent Basin



MONTANA SNOW SURVEYS MAY 1, 1952

COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date	Snow	Water Content (Inches)					Average Data May 1	Y e a r s	
			Survey	Depth (In.)	May 1	Past Records						
			1952	1952	1952	1951	1950	1949	1948	Avg.	%Avg.	
<u>BITTERROOT</u>												
Gibbons Pass	13D2	7100	May 2	47	21.8	23.6	28.3	22.9	21.3	19.6	111	17
Nezperce Camp	11D2	5580	May 1	8	4.0	4.9	13.1	6.0	7.8	4.4	91	16
Nezperce Pass	11D1	6575	May 1	28	12.2	13.3	18.6	12.9	15.1	9.6	127	16
Stuart Mt. #1	13C1	7400	Apr. 30	61	31.1	--	--	22.2	31.1	26.2	119	14
*Moose Creek	13D16	6200										
*Kit Carson	11D3	4700										
*Savage Pass	11C4	6000	Apr. 28	48	25.3	--	--	30.9	--	21.1	120	9
*Powell Pasture	15C3	3700	Apr. 30	4	2.3	--	--	9.8	6.0	6.3	37	5
*Packers Meadow	11C2	5700	Apr. 28	22	12.3	7.9	24.3	24.7	21.9	13.1	94	16
<u>PEND ORIELLE</u>												
Baree Mt.	13B1	6000	Apr. 30	72	37.6	40.4	68.1	51.1	47.2	40.0	94	16
Freezeout Summit	15C3	7000	May 1	69	33.1	--	--	36.3	--	22.0	150	15
Hoodoo Creek	13C1	6200	May 1	76	38.6	--	--	--	--	36.6	106	11
Mosquito Ridge	16A4	5600	Apr. 29	55	27.9	26.8	47.0	34.1	34.6	28.1	99	14

* Adjacent Basin





Federal - State - Private
COOPERATIVE SNOW SURVEYS

Furnishes the basic data
necessary for forecasting
water supply for irrigation,
domestic and municipal water
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generation, navigation,
mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"